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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/526,873	Applicant(s) GADDAM ET AL.
	Examiner Jamal Javaid	Art Unit 2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 04 March 2005.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-20 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 04 March 2005 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-166/08)
 Paper No(s)/Mail Date 3/04/2005

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____
 5) Notice of Informal Patent Application
 6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 5-8, 10-12, 15-18, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Breti et al. (US Patent Application No. US 2005/0152411).

Consider claim 1, Breti discloses a digital signal transmission apparatus (**see paragraph 0007 lines 1-2**) comprising:

a multiplexer having an output port (**see element 190 in figure 11**), an input port for inputting an information bit-stream (**see the multiplexer, element 190 in figure 11, where the top three input ports input information bit-streams, as disclosed in paragraph 0066 lines 1-3 and lines 6-12; see claim 2**) and an input port for inputting a placeholder bit-stream (**see the multiplexer, element 190 in figure 11, where the bottommost input port inputs a placeholder bit-stream i.e. dummy stream, further disclosed in paragraph 0066 lines 12-17 and claim 3**), for multiplexing the bit-streams inputted from the input ports to form a multiplexed bit-stream for output on the output port (**see paragraph 0066 lines 17-20**);

a data formatter for receiving the multiplexed bit-stream and for replacing bits of said placeholder bit-stream within the received multiplexed bit-stream with bits derived from said information bit-stream within said received multiplexed bit-stream to form a modified bit-stream (**see interleaver and data replacer, elements 192 and 194 in figure 11, with the convolutional byte interleave of the interleaver and the dummy byte replacement of the data replacer, together combined, collectively perform the function of said data formatter, as disclosed in paragraph 0067; also, see claim 3**);

an encoder for encoding the modified bit-stream to produce an encoded bit-stream (**see elements 204 and 208 in figure 11 and paragraph 0070**);

a transmitter for transmitting the encoded bit-stream (**see element 202 in figure 11 and claim 62**).

Consider claim 2, Breti discloses that the deriving creates a new bit, but retains any bit from which derivation has occurred (**see paragraph 0068, where new bits and information are created after being outputted from the data replacer, but the original bits and information that the new data is created from is still retained**).

Consider claim 5, Breti discloses that the multiplexer is configured with an additional input port for inputting an additional bit-stream (**see elements 162, 164, and 166 in figure 11, which each receive uncoded auxiliary bit-streams, which are**

additional bit-streams and are ultimately inputted to multiplexer; also, see paragraph 0064, lines 3-18).

Consider claim 6, Breti discloses that the multiplexer is configured to input a plurality of additional bit-streams (**see elements 162, 164, and 166 in figure 11, which each receive uncoded auxiliary bit-streams, which are additional bit-streams and are ultimately inputted to multiplexer; also, see paragraph 0064, lines 3-18**) , a plurality of information bit-streams (**see the multiplexer, element 190 in figure 11, where the top three input ports input information bit-streams, as disclosed in paragraph 0066 lines 1-3 and lines 6-12; see claim 2**), and a plurality of placeholder bit-streams through their respective input ports (**see the multiplexer, element 190 in figure 11, where all four inputs are configured to input placeholder bit-streams, although the top three inputs input placeholder and information bit-streams and the bottommost input exclusively inputs a place-holder bit-stream, as disclosed in paragraph 0066**) for said multiplexing to form said multiplexed bit-stream (**see paragraph 0066 lines 17-20**), each of the information bit streams to be multiplexed by the multiplexer having an identical number of bits (**see paragraph 0066 lines 1-3, where each information bit-stream has 3 bytes**), each of the placeholder bit-streams to be multiplexed by the multiplexer having an identical number of bits (**see paragraph 0066 line 4, where each dummy bit-stream has 184 placeholder bytes**), the multiplexer being configured to multiplex each of the information and placeholder bit-streams for their respective identical number of bits before selecting another bit-stream

for multiplexing (see element 190 in figure 11, where the information and placeholder bit-streams are first multiplexed, also disclosed in paragraph 0066, before selecting another bit-stream for multiplexing, which is from the output of multiplexer 186 in figure 11, also disclosed in paragraphs 0067 and 0068).

Consider claim 7, Breti discloses that said multiplexer is further configured to perform said multiplexing so as to select in succession, over a predetermined number of bit-streams, no more than three of said additional bit-streams (see paragraph 0067 lines 5-8, which discloses that said addition bit-streams are successively selected and multiplexed (from multiplexer 186 in figure 11), which as is apparent from figure 11 and paragraph 0064 lines 3-18, has exactly three additional bit-streams i.e. no more than three additional bit-streams).

Consider claim 8, Breti discloses that the multiplexer is further configured to perform said multiplexing so as to input in succession one or more of the additional bit-streams after each input of one of an information bit-stream and a placeholder bit-stream (see element 190 in figure 11, where the information and placeholder bit-streams are first multiplexed, also disclosed in paragraph 0066, before selecting the three additional bit-streams for multiplexing, which is from the output of multiplexer 186 in figure 11, also disclosed in paragraphs 0067 and 0068).

Consider claim 10, Breti discloses that said replacing comprises removing selected bits from said information bit-stream within said received multiplexed bit-stream and substituting the removed bits to replace bits of said placeholder bit-stream within said received multiplexed bit-stream (**see paragraph 0053 and claim 5**).

Consider claim 11, Breti discloses a digital signal transmission method (**see paragraph 0007 lines 1-2**) comprising the steps of:

multiplexing an information bit-stream (**see the multiplexer, element 190 in figure 11, where the top three input ports input information bit-streams, as disclosed in paragraph 0066 lines 1-3 and lines 6-12; see claim 2**) and a placeholder bit-stream (**see the multiplexer, element 190 in figure 11, where the bottommost input port inputs a placeholder bit-stream i.e. dummy stream, further disclosed in paragraph 0066 lines 12-17 and claim 3**) to form a multiplexed bit-stream (**see paragraph 0066 lines 17-20**);

receiving the multiplexed bit-stream and replacing bits of said placeholder bit-stream within the received multiplexed bit-stream with bits derived from said information bit-stream within said received multiplexed bit-stream to form a modified bit-stream (**see interleaver and data replacer, elements 192 and 194 in figure 11, with the convolutional byte interleave of the interleaver and the dummy byte replacement of the data replacer, together combined, collectively perform claimed function, as disclosed in paragraph 0067; also, see claim 3**);

encoding the modified bit-stream to produce an encoded bit-stream (see elements 204 and 208 in figure 11 and paragraph 0070); and transmitting the encoded bit-stream (see element 202 in figure 11 and claim 62).

Consider claim 12, Breti discloses that the deriving creates a new bit, but retains any bit from which derivation has occurred (see paragraph 0068, where new bits and information are created after being outputted from the data replacer, but the original bits and information that the new data is created from is still retained).

Consider claim 15, Breti discloses multiplexing an additional input port for inputting an additional bit-stream to form said multiplexed bit-stream (see elements 162, 164, and 166 in figure 11, which each receive uncoded auxiliary bit-streams, which are ultimately inputted to multiplexer; also, see paragraph 0064, lines 3-18).

Consider claim 16, Breti discloses that the multiplexer is configured to input a plurality of additional bit-streams (see elements 162, 164, and 166 in figure 11, which each receive uncoded auxiliary bit-streams, which are additional bit-streams and are ultimately inputted to multiplexer; also, see paragraph 0064, lines 3-18) , a plurality of information bit-streams (see the multiplexer, element 190 in figure 11, where the top three input ports input information bit-streams, as disclosed in paragraph 0066 lines 1-3 and lines 6-12; see claim 2), and a plurality of placeholder

bit-streams through their respective input ports (**see the multiplexer, element 190 in figure 11, where all four inputs are configured to input placeholder bit-streams, although the top three inputs input placeholder and information bit-streams and the bottommost input exclusively inputs a place-holder bit-stream, as disclosed in paragraph 0066**) for said multiplexing to form said multiplexed bit-stream (**see paragraph 0066 lines 17-20**), each of the information bit streams to be multiplexed by the multiplexer having an identical number of bits (**see paragraph 0066 lines 1-3, where each information bit-stream has 3 bytes**), each of the placeholder bit-streams to be multiplexed by the multiplexer having an identical number of bits (**see paragraph 0066 line 4, where each dummy bit-stream has 184 placeholder bytes**), the multiplexer being configured to multiplex each of the information and placeholder bit-streams for their respective identical number of bits before selecting another bit-stream for multiplexing (**see element 190 in figure 11, where the information and placeholder bit-streams are first multiplexed, also disclosed in paragraph 0066, before selecting another bit-stream for multiplexing, which is from the output of multiplexer 186 in figure 11, also disclosed in paragraphs 0067 and 0068**).

Consider claim 17, Breti discloses that said multiplexer is further configured to perform said multiplexing so as to select in succession, over a predetermined number of bit-streams, no more than three of said additional bit-streams (**see paragraph 0067 lines 5-8, which discloses that said addition bit-streams are successively selected and multiplexed (from multiplexer 186 in figure 11), which as is apparent from**

figure 11 and paragraph 0064 lines 3-18, has exactly three additional bit-streams i.e. no more than three additional bit-streams).

Consider claim 18, Breti discloses that the multiplexer is further configured to perform said multiplexing so as to input in succession one or more of the additional bit-streams after each input of one of an information bit-stream and a placeholder bit-stream (see element 190 in figure 11, where the information and placeholder bit-streams are first multiplexed, also disclosed in paragraph 0066, before selecting the three additional bit-streams for multiplexing, which is from the output of multiplexer 186 in figure 11, also disclosed in paragraphs 0067 and 0068).

Consider claim 20, Breti discloses that said replacing comprises selecting bits from said information bit-stream within said received multiplexed bit-stream, removing selected bits from said information bit-stream within said received multiplexed bit-stream and substituting the removed bits to replace bits of said placeholder bit-stream within said received multiplexed bit-stream (see paragraph 0053 and claim 5).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breti et al. (US Patent Application No. US 2005/0152411) in view of Abbott (US Patent No. 6,438,569).

Consider claim 3, Breti discloses replacing bits of the placeholder bit-stream with bits derived from the information bit-stream (**see paragraph 0067 and claim 3**). Breti does not specifically disclose duplicating bits of the information bit-stream within the received multiplexed bit-stream to form duplicate bits and substituting the duplicate bits to replace bits of the placeholder bit-stream within the multiplexed bit-stream.

Abbot teaches duplicating bits of the information bit-stream within the received multiplexed bit-stream to form duplicate bits (**see col. 5 lines 30-32, wherein it is disclosed that data on the inputs, i.e. information within the received bit-stream, is duplicated, to form duplicate bites**) and substituting the duplicate bits to replace bits of the placeholder bit-stream within the multiplexed bit-stream (**see claims 16 and 22, wherein it is disclosed that the initial data bits are replaced, i.e. substituted**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Breti and duplicate bits of the information bit-stream within the received multiplexed bit-stream to form duplicate bits and substituting the duplicate bits to replace bits of the placeholder bit-stream within the multiplexed bit-stream, as taught by Abbot, thus allowing for systems that are fast, cost-effective, and reconfigurable (**see col. 3 lines 51-53**).

Consider claim 13, Breti discloses replacing bits of the placeholder bit-stream with bits derived from the information bit-stream (**see paragraph 0067 and claim 3**). Breti does not specifically disclose duplicating bits of the information bit-stream within the received multiplexed bit-stream to form duplicate bits and substituting the duplicate bits to replace bits of the placeholder bit-stream within the multiplexed bit-stream.

Abbot teaches duplicating bits of the information bit-stream within the received multiplexed bit-stream to form duplicate bits (**see col. 5 lines 30-32, wherein it is disclosed that data on the inputs, i.e. information within the received bit-stream, is duplicated, to form duplicate bites**) and substituting the duplicate bits to replace bits of the placeholder bit-stream within the multiplexed bit-stream (**see claims 16 and 22, wherein it is disclosed that the initial data bits are replaced, i.e. substituted**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Breti and duplicate bits of the information bit-stream within the received multiplexed bit-stream to form duplicate bits and substituting the duplicate bits to replace bits of the placeholder bit-stream within the multiplexed bit-stream, as taught by Abbot, thus allowing for systems that are fast, cost-effective, and reconfigurable (**see col. 3 lines 51-53**).

3. Claims 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breti et al. (US Patent Application No. US 2005/0152411) in view of Choi et al. (US Patent Application No. US 2002/0041608).

Consider claim 4, Breti discloses that the multiplexer is configured to multiplex an additional bit-stream in forming said multiplexed bit-stream (**see elements 162, 164, and 166 in figure 11, which each receive uncoded auxiliary bit-streams, which are additional bit-streams and are ultimately inputted to multiplexer; also, see paragraph 0064, lines 3-18**); a data formatter that performs said replacing (**see interleaver and data replacer, elements 192 and 194 in figure 11, with the convolutional byte interleave of the interleaver and the dummy byte replacement of the data replacer, together combined, collectively perform the function of said data formatter, as disclosed in paragraph 0067; also, see claim 3**), and the encoder is configured to process every bit of said modified bit-stream when operating on bits derived from said additional bit-stream (**see paragraph 0070**) and to process every other bit of said modified bit-stream when operating on bits derived from said information bit-stream (**see paragraphs 0072 and 0080**). Breti does not specifically disclose that the data formatter is configured to bypass said replacing when operating on said additional bit-stream within said received multiplexed bit-stream.

Choi teaches that the data formatter is configured to bypass said replacing when operating on said additional bit-stream within said received multiplexed bit-stream (**see paragraphs 0052, 0053, and 0054; where it is disclosed that the randomizer, i.e. a data formatter, bypasses replacing when operating on multiplexed additional and ATSC data, i.e. the additional bit-stream within said received multiplexed bit-stream**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Breti and have the data formatter configured to bypass said replacing when operating on said additional bit-stream within said received multiplexed bit-stream, as taught by Choi, thus allowing a DTV system robust to noise (**see paragraph 0016**).

Consider claim 14, Breti discloses that the multiplexer is configured to multiplex an additional bit-stream in forming said multiplexed bit-stream (**see elements 162, 164, and 166 in figure 11, which each receive uncoded auxiliary bit-streams, which are additional bit-streams and are ultimately inputted to multiplexer; also, see paragraph 0064, lines 3-18**); a data formatter that performs said replacing (**see interleaver and data replacer, elements 192 and 194 in figure 11, with the convolutional byte interleave of the interleaver and the dummy byte replacement of the data replacer, together combined, collectively perform the function of said data formatter, as disclosed in paragraph 0067; also, see claim 3**), and the encoder is configured to process every bit of said modified bit-stream when operating on bits derived from said additional bit-stream (**see paragraph 0070**) and to process every other bit of said modified bit-stream when operating on bits derived from said information bit-stream (**see paragraphs 0072 and 0080**). Breti does not specifically disclose that the data formatter is configured to bypass said replacing when operating on said additional bit-stream within said received multiplexed bit-stream.

Choi teaches that the data formatter is configured to bypass said replacing when operating on said additional bit-stream within said received multiplexed bit-stream (**see paragraphs 0052, 0053, and 0054; where it is disclosed that the randomizer, i.e. a data formatter, bypasses replacing when operating on multiplexed additional and ATSC data, i.e. the additional bit-stream within said received multiplexed bit-stream**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Breti and have the data formatter configured to bypass said replacing when operating on said additional bit-stream within said received multiplexed bit-stream, as taught by Choi, thus allowing a DTV system robust to noise (**see paragraph 0016**).

4. Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breti et al. (US Patent Application No. US 2005/0152411) in view of Knutson et al. (US Patent No. 6,788,710).

Consider claim 9, Breti discloses that the plural bit-streams are identical in length (**see paragraph 0066 lines 1-3, where each information bit-stream has 3 bytes and see paragraph 0066 line 4, where each dummy bit-stream has 184 placeholder bytes**). Breti also discloses inputting of one of an information bit-stream (**see the multiplexer, element 190 in figure 11, where the top three input ports input information bit-streams, as disclosed in paragraph 0066 lines 1-3 and lines 6-12; see claim 2**) and a placeholder bit-stream (**see the multiplexer, element 190 in**

figure 11, where the bottommost input port inputs a placeholder bit-stream i.e. dummy stream, further disclosed in paragraph 0066 lines 12-17 and claim 3). Breti does not specifically disclose that the inputting of one of an information bit-stream and a placeholder bit-stream successively alternates, over at least most inputs of the one information or placeholder bit-streams, between an information bit-stream and a placeholder bit-stream.

Knutson teaches that the inputting of one of an information bit-stream and a placeholder bit-stream successively alternates, over at least most inputs of the one information or placeholder bit-streams (**see figure 4, where the bit-streams inputted to multiplexer 44 (one of an information bit-stream and one of an auxiliary and null bit-stream) are alternated; further disclosed in col. 4 lines 46-67**) between an information bit-stream and a placeholder bit-stream (**see col. 5 lines 1-7, where datastream 30 is an information bit-stream and the null stream is a placeholder bit-stream**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Breti and have the inputting of one of an information bit-stream and a placeholder bit-stream successively alternates, over at least most inputs of the one information or placeholder bit-streams, between an information bit-stream and a placeholder bit-stream, as taught by Knutson, thus allowing simple and efficient means to insert auxiliary data into a datastream (**see col. 2 lines 16-20**).

Consider claim 19, Breti discloses that the plural bit-streams are identical in length (**see paragraph 0066 lines 1-3, where each information bit-stream has 3 bytes and see paragraph 0066 line 4, where each dummy bit-stream has 184 placeholder bytes**). Breti also discloses inputting of one of an information bit-stream (**see the multiplexer, element 190 in figure 11, where the top three input ports input information bit-streams, as disclosed in paragraph 0066 lines 1-3 and lines 6-12; see claim 2**) and a placeholder bit-stream (**see the multiplexer, element 190 in figure 11, where the bottommost input port inputs a placeholder bit-stream i.e. dummy stream, further disclosed in paragraph 0066 lines 12-17 and claim 3**). Breti does not specifically disclose that the inputting of one of an information bit-stream and a placeholder bit-stream successively alternates, over at least most inputs of the one information or placeholder bit-streams, between an information bit-stream and a placeholder bit-stream.

Knutson teaches that the inputting of one of an information bit-stream and a placeholder bit-stream successively alternates, over at least most inputs of the one information or placeholder bit-streams (**see figure 4, where the bit-streams inputted to multiplexer 44 (one of an information bit-stream and one of an auxiliary and null bit-stream) are alternated; further disclosed in col. 4 lines 46-67**) between an information bit-stream and a placeholder bit-stream (**see col. 5 lines 1-7, where datastream 30 is an information bit-stream and the null stream is a placeholder bit-stream**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Breti and have the inputting of one of an information bit-stream and a placeholder bit-stream successively alternates, over at least most inputs of the one information or placeholder bit-streams, between an information bit-stream and a placeholder bit-stream, as taught by Knutson, thus allowing simple and efficient means to insert auxiliary data into a datastream (**see col. 2 lines 16-20**).

Conclusion

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jamal Javaid whose telephone number is 571-270-5137. The examiner can normally be reached from 8:00-5:00

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe, can be reached on 571-272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jamal Javaid

/Jamal Javaid/

Examiner, Art Unit 2616

/Aung S. Moe/

Supervisory Patent Examiner, Art Unit 2616